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## More Exercise for Seniors

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More Exercise for Seniors (MBvO in Dutch) is an umbrella organisation that delivers widely spread physical activity programs in the Netherlands, i.e. gymnastics, swimming, fitness, yoga, game & sports. Programs are usually offered once a week. MBvO was started on an experimental basis in 1966, and has been implemented widely since. The goal of MBvO is to promote optimal functioning in older adults, not only physically, but also mentally and socially. Currently, more than 300,000 older people participate weekly in various types of MBvO activities. The basic form of MBvO consists of gymnastics once a week. Until now, no study has been carried out on MBvO-gym in terms of health gain. This thesis is an attempt to explore the opportunities and challenges of MBvO-gym, in terms of health effects and implementation.

The aims of this thesis were as stated:

- To identify entry correlates and motivations of older adults (50-plus) participating in physical activity programs (including MBvO-gym).
- To review the literature on effectiveness of physical activity programs on functional status and health related quality of life (HRQoL) of older adults aged 65-plus.
- To examine the effectiveness of MBvO-gym on functional status, HRQoL, and health-related physical fitness of older adults aged 65 – 80.
- To study the drop-out incidence, and determinants of drop-out in MBvO-gym, and to compare with several other types of physical activity programs for older adults.
- To develop a social psychological model related to maintenance of physical activity participation in older adults.
- To recommend improvements on the efficacy, the effectiveness and the quality of MBvO-gym in terms of health enhancing physical activity promotion, and implementation.

## **ENTRY CORRELATES AND MOTIVATIONS**

In Chapter 1 entry correlates, and motivations of older adults participating in physical activity programs were identified. MBvO attracted relatively older seniors, whereas organized sports mainly attracted the younger seniors. Walking, MBvO, and gymnastics attracted more women, whereas skating, and table tennis were reported to attract more male participants. Badminton and cycling attracted relatively higher educated participants, whereas MBvO attracted relatively lower educated participants. Three distinct motivational constructs were found: 'Relax and Enjoy', 'Care & Cure', and 'Competition'. MBvO participants are mainly found in the motivational construct 'Relax & Enjoy', which is dominated by aspects relaxation, and pleasure.

## **EFFECTIVENESS ON FUNCTIONAL STATUS, HEALTH RELATED QUALITY OF LIFE, AND HEALTH-RELATED PHYSICAL FITNESS**

In Chapter 3 a review was reported of the effectiveness of exercise programs for seniors on functional status, and HRQoL. There is strong evidence for positive effects of exercise programs on both functional status as well as HRQoL in older adults. Considering these results and the potential impact on independence of older adults, it should be recommended to study which exercise modes are most effective, and whether there is a minimum threshold for frequency, intensity, and duration of exercise sessions. A problem regarding HRQoL, and functional status as an outcome measure is the lack of comparability due to the different operationalization of concepts, and the use of different measurement instruments. To improve data collection in the future it is important that researchers choose the same instruments.

In Chapter 4 and 5 the effects of MBvO gym on the health related quality of life, functional status, and health-related physical fitness of independently living people, aged 65 to 80 years were assessed through a randomised controlled trial in community dwelling of older people, with a comparatively low level of fitness. The study was carried out in two regions: Drenthe and Zuid-Holland. Using the GALM (Groningen Active Living Model) method, 4,600 independently living people aged 65 years and older were asked to participate in a motor fitness test. Of the 721 people who participated, 386 (the least fit)

were invited to take part in the study. They were then randomly divided into an experimental and a control group. The experimental group did gymnastics once or twice a week. The control group received a health educational program.

Assessments were carried out at pre-test and post-test (10 weeks). In the groups offered MBvO-gym once a week, no effects were found on subjective health, functional status or HRQoL and only minor effects on diastolic blood pressure, leg strength, and functional reach. In the groups offered MBvO-gym twice a week, some beneficial effects were found on the HRQoL, and functional reach in the people who were least physically active at baseline. Relatively more individual improvement in the physical fitness was found in the older adults (70+).

It is recommended that the frequency and intensity of the regular MBvO-gym should be increased, to emphasize the importance of health education, and that relatively inactive and older individuals (70+) should be recruited.

### **DROP-OUT INCIDENCE, AND DETERMINANTS OF DROPOUT OUT**

Chapter 6 examined drop-out incidence, moment of drop-out, and switching behaviour in organized exercise programs for seniors in the Netherlands, as determined in a prospective cohort study (with baseline measurements at the start of the exercise program and follow-up after six months; N=1,725, response rate 73%). Participants were community-living individuals 50+ who participated in different forms of organized exercise programs. The average drop-out incidence was 0.15 per six months, in MBvO-gym drop-out incidence was 0.10 per six months. The drop-out incidence and the timing of drop-out differed substantially between the exercise programs. In total, 31% of the people who dropped out of one type of exercise program switched to another type of exercise. The type of program was related with differences in this switching behaviour. There is a need for more research in this area.

### **SOCIAL PSYCHOLOGICAL MODEL RELATED TO MAINTENANCE OF EXERCISE PARTICIPATION**

To assess predictors of the intention to continue participation, and the actual maintenance of exercise participation in exercise programs the dataset was used of the prospective cohort study earlier mentioned in Chapter 6. In this study a stepwise logistic regression model was applied. Significant odds ratios predicting the intention to continue with the exercise program were found for female gender, younger age, being married, being a non-smoker, being in paid employment, having a positive attitude towards exercise, and having a high self-efficacy at baseline. Significant odds ratios predicting actual maintenance of exercise participation were short lapses, absence of lapses, high intention at baseline, high perceived quality of the program, positive attitude at baseline, and few risk situations at baseline. In order to promote maintenance of exercise participation for older adults, effort should be taken to prevent lapses, to help people cope with risk situations for lapses, to improve the attitude towards exercise participation, and to improve the quality of the program.

### **GENERAL CONCLUSIONS**

MBvO-gym is one of the most popular physical activity programs for seniors in the Netherlands. MBvO attracts relatively older seniors, more women, and relatively lower educated seniors. Drop-out in MBvO participants during the first six months was relatively low, compared to nine other programs for seniors which were embedded in the study.

Of the MBvO participants who drop-out, 31% switch to other types of exercise. This is comparable to switching behaviour seen in other types of exercise programs. MBvO participants who switch to another type of activity mainly switch to walking, swimming, tennis and NIB-tv.

Once a week participation in MBvO does not lead to a measurable short term improvement on subjective health, functional status or quality of life and offers only minor effects on diastolic blood pressure, leg strength, and functional reach. Twice a week MBvO participation was more effective in enhancing health, especially for older, and physically inactive seniors. The enormous popularity of the program, the large

network of groups and instructors works in favour of MBvO to reach the many (physically inactive) seniors in the Netherlands.

It is of importance to offer more education to the MBvO instructors on the health enhancing physical activity guidelines, and especially how to stimulate participants to comply with these guidelines.